

The species of *Bidessus* Sharp (Coleoptera: Dytiscidae) of Africa south of the Sahara including Madagascar—I

by

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Four new species, *Bidessus ruandensis*, *B. rossi*, *B. fulgidus*, and *B. straeleni*, and two new subspecies, *B. sharpi nigeriensis* and *B. sharpi sudanensis* are described. In addition information concerning the already described species of African *Bidessus* has been collated and where possible expanded.

Guignot (1959) placed all the species of African *Bidessus* then known to him occurring south of the Sahara, in one group, group *sharpi*, using type of coloration together with the presence or absence of two divergent rows of punctures on the middle of the metasternum to subdivide the species into a larger and smaller subgroup; the first with the elytra not testaceous with entire longitudinal black lines and with the middle of the metasternum marked with two rows of points; the second with the elytra testaceous with entire longitudinal black lines, and without the middle of the metasternum marked with two rows of points. Unfortunately in both groups species occur in which the two rows of metasternal punctures are so fine as to be only visible under a high magnification.

Since within the boundaries of each species individual variation is the rule rather than the exception no division into groups using external characters as an aid to identification can be entirely satisfactory. The following division according to colour pattern is workable for what may be considered typical members of the species since the character is borne by the most numerous and widespread of the individuals within it.

KEY TO THE GROUPS

- 1 Elytral colour black with testaceous markings.
- 2 Elytra black with three transverse testaceous bands, the posterior one the shortest. (These may be reduced to lateral spots or, as in *B. granulum* Régimbart, the two anterior bands may be united longitudinally, a little nearer the suture than the median line of the elytron, so that a lateral black mark is enclosed) . . . group **sharpi** Régimbart
- 2' The testaceous marks are longitudinal, usually discrete thus forming broken longitudinal lines. . . group **ovideus** Régimbart
- 1' Colour of the elytra uniformly brown or black with sometimes faint testaceous markings or testaceous with longitudinal black lines sometimes anastomosing.
- 3 Colour of the elytra uniformly black or brown with sometimes faint testaceous markings . . . group **unicolor** Gschwendtner
- 3' Elytra testaceous with longitudinal black lines sometimes anastomosing . . . group **perixiguus** Kolbe

Bidessus ghesquieri Guignot (1948:1) was described from a single female and I have not been able to find any mention of it since. It is probably a synonym of *B. brevistriga* Régimbart. *B. complicatus* Sharp, in spite of Sharp's remark that the pronotum is impunctate, I believe to be a synonym of *B. sharpi* Régimbart. Since I do not have specimens for comparison neither species is mentioned in the following key.

As with the division of the genus into groups the following key to the species of African *Bidessus* makes use of characters which are possessed by typical members of each species. Such characters, besides elytral pattern are shape, size, presence or absence of reticulation, punctuation, the size of the punctures in the two divergent rows on the middle of the metasternum and the divergence or not of the metacoxal lines. The aedeagus is also important but the differences from one species to another may not be very great and they also appear to be variable.

KEY TO THE *BIDESSUS* SPECIES OF THE *B. SHARPI* GROUP

- 1 Three irregular testaceous transverse bands on each elytron. (These are sometimes reduced to spots).
- 2 Head testaceous.
- 3 Elytral discal striae straight.
- 4 Punctures of the two divergent rows on the middle of the metasternum medium in size.
- 5 Punctuation outside the elytral striae very fine, between them medium. Sutural striae disappearing before the apex of the elytra. Elytral discal striae reaching the middle of the elytral length. L* 1,4-1,6 **sharpi**
- Elytral discal striae reaching beyond the middle of the elytra. **sharpi**
- Medium lobe of the aedeagus as in typical *B. sharpi* . . . **sharpi nigeriensis**
- Medium lobe of the aedeagus narrower than in *B. sharpi* . . . **sharpi sudanensis**
- 5' Punctuation outside the elytral striae not very fine; sutural striae reaching the apex of the elytra; elytral discal striae short, about one quarter of the elytral length. L. 1,6-1,8 **brevistriga**
- 4' Punctures of the two divergent rows on the middle of the metasternum very coarse.
- 6 Elytral discal striae reaching beyond the middle of the elytral length. L. 1,4-1,6 **fictor**
- 3' Elytral striae sinuate and long. L. 1,6-1,8 . . . **longistriga**
- 2' Head dark brown or black.
- 7 Metacoxal lines divergent. Punctures of the two divergent rows on the middle of the metasternum medium in size.
- 8 Elytral discal striae almost half the length of the elytra. L. 1,8 . . . **ruandensis**
- 8' Elytral discal striae about one quarter of the elytral length. L. 1,6-1,7 . . . **rossi**
- 7' Metacoxal lines almost parallel. Punctures of the two divergent rows on the middle of the metasternum fine.
- 9 Elytral punctuation very fine and indistinct. Punctures of the two divergent rows on the middle of the metasternum very fine. L. 1,6 . . . **fulgidus**
- 9' Elytral punctuation strong. Punctures of the two divergent rows on the middle of the metasternum fine. L. 1,25 . . . **straeleni**
- 1' The anterior testaceous band (when present) united longitudinally to the second band a little nearer to the suture than the middle of the elytron.
- 10 Shape a short and wide oval. Punctuation between the elytral discal striae and the suture strong but not dense. L. 1,6 . . . **granulum**

*L = Body length (mm) from front of head to apex of elytra.

DESCRIPTIONS

Bidessus sharpi Régimbart, 1895: 77, figs 1-5

L. 1,4-1,6 mm. A short oval species with a not very evident pronoto-elytral angle; elytral pattern as Régimbart's figure (1895: 77, fig. 28, and fig. 1 in this paper or as in *brevistriga* (figs 8 and 10 in this paper). Guignot (1959, fig. 235 p. 252) figures the reduced pattern which most of the southern African forms display. These have the undersides dark, but from Malawi, Sudan and Nigeria my examples show little, if any, reduction of pattern and the undersides are testaceous or testaceous and black.

The head is testaceous or light brown, very finely and sparsely punctured and obscurely reticulate. The pronotal striae are elbowed and usually have at their base a clear depression with about six to eight large punctures which are not continued across the base of the pronotum. The elytra are rounded, some more so than others, and the elytral discal striae attain the middle of the elytral length. Specimens in my collection from Nigeria have the elytral striae longer, clearly passing the middle of the elytral length as do those from the Sudan although the latter are not so long as in the Nigerian ones. The sutural striae are well impressed and punctate, inclined towards the suture and disappearing well before the apex of the elytra. The punctures between the striae and the suture are medium in size and dense but are subject to variation; those outside them are much finer and denser as are those posterior to the striae.

The divergent rows of punctures on the middle of the metasternum are fairly coarse and those on the metacoxae larger and almost in two oblique rows. The metacoxal lines are divergent. Some of the examples from Nigeria have slightly sinuate elytral discal striae as has *longistriga* which, however, only occurs in Madagascar, and whose elytral punctuation is coarser. The Nigerian and Sudanese forms appear to me to merit subspecies rank, *B. sharpi sudanensis* and *B. sharpi nigeriensis*.

MALE: Median lobe of the aedeagus as in figs 2, 3, 4, 5.

Distribution. The whole of tropical and subtropical Africa.

Bidessus fector Omer-Cooper, 1959: 124–128, figs 6, 7

L. 1.4–1.6 mm. The shape is a wide oval with almost no pronoto-elytral angle: coloration basically as in *B. sharpi* Rég. The head is reddish testaceous as are the base of the antennae, the apical joints being tinged with brown. The pronotal striae are long and elbowed with a cavity at the base and a few large punctures. The elytral discal striae are also long, passing the middle of the elytra. The punctures between the discal striae and the suture fine to medium, almost arranged in rows, coarser than the punctures outside them and behind, which are very fine and dense. The underside is brownish black with the abdomen lighter and legs testaceous. The middle of the metasternum is marked with two divergent rows of coarse punctures; the metacoxae bear a few coarse punctures roughly arranged in two oblique rows.

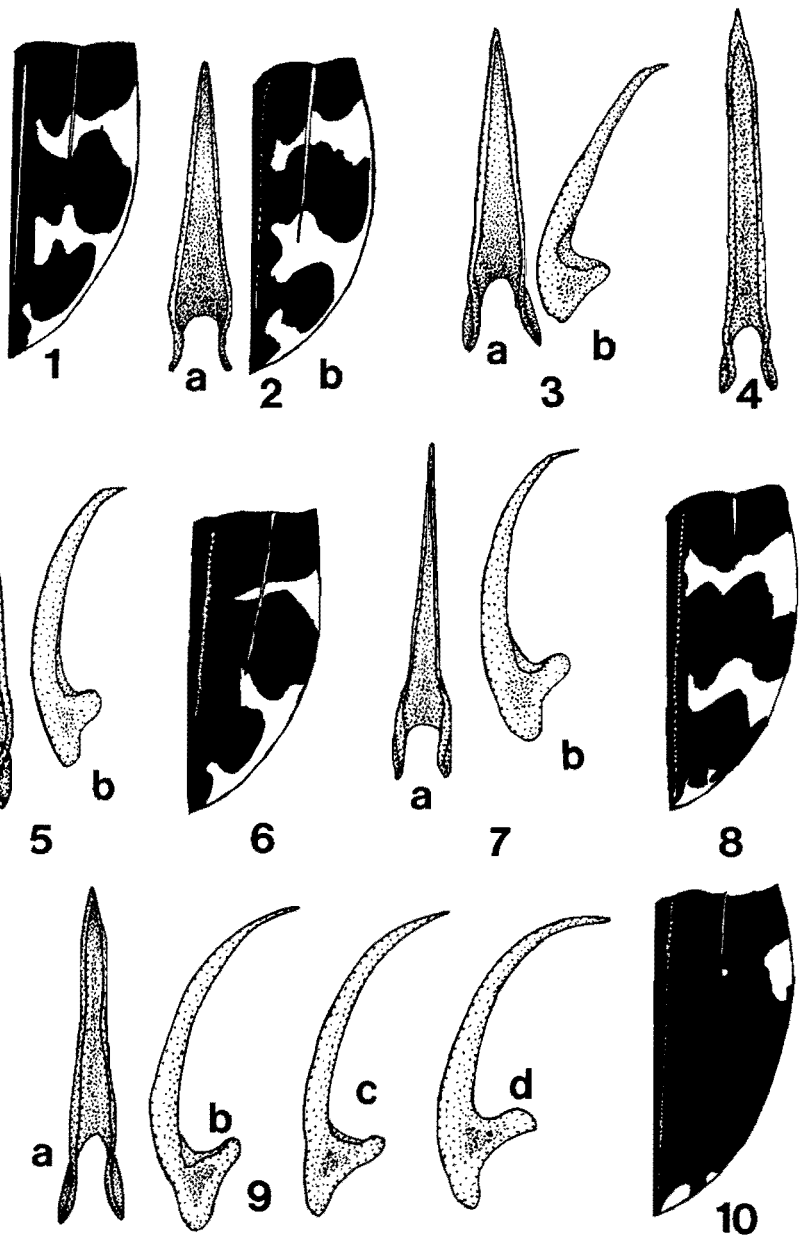
MALE: Median lobe of the aedeagus longer and narrower than that of typical *sharpi* (fig. 7).

Distribution. Malawi; Lake shore; R. Bua; L. Shirwa. Mozambique; Umbelozzi river nr. Goba.

This species is very like *B. sharpi* but differs from it in the longer elytral striae, the larger and more condensed punctures at the base of the pronotal striae and the larger punctures in the two divergent rows on the metasternum. From *longistriga* it may be distinguished by the straight, although obliquely placed elytral striae, and by the more irregular and finer punctures between the discal striae and the suture. It may well be that this is also a geographical subspecies of *B. sharpi*.

Bidessus longistriga Régimbart, 1895: 79–80, figs 11, 16

L. 1.6–1.8 mm. This species is distinguished from other members of the group by the shorter more robust shape, the sinuate discal elytral striae clearly passing the middle of the elytral length (fig. 11) and by the coarse, but not dense elytral punctuation.



The sutural striae consist of a line of punctures sometimes united by a fine groove. The pronotal striae are elbowed and long with, at their base, a cavity and a few large punctures. The underside is black with the legs testaceous. The two divergent rows of punctures on the metasternum are of medium size, the punctures on the metacoxae coarser. The metacoxal lines are parallel at the base but divergent in front.

MALE: Median lobe of the aedeagus as in fig. 16.

Distribution. Madagascar.

Bidessus brevistriga Régimbart, 1906: 245, figs 8–10

L. 1.6–1.8 mm. Coloration the same as in *sharpi* but a narrower oval with usually a clear pronoto-elytral angle. The pronotal striae do not have so deep a cavity at the base as in *B. sharpi*, the basal punctures are as a rule not quite so large and at least one row of smaller punctures crosses the base. The elytral striae are shorter than in either of the preceding species, about one quarter to one third of the elytral length (figs 8, 9, 10), the punctures between them and the suture variable in size and density, those outside the striae less fine than in *B. sharpi* but not coarse. The sutural striae are punctured and visible almost to the apex of the elytra. The underside is brown or black or testaceous. The divergent rows of punctures on the metasternum are only a little finer than those in *B. sharpi*. The metacoxal lines are divergent.

MALE: Median lobe of the aedeagus as in fig. 9.

Distribution. The whole of tropical Africa but not yet recorded from southern Africa.

Although variable as regards punctuation and to some extent shape, this appears to be a distinct species not divisible into geographical races.

Bidessus ruandensis spec. nov., fig. 18

L. 1.8 mm. Elongate oval slightly narrowed behind, no pronoto-elytral angle; shining, black and testaceous with transverse testaceous bands as in *sharpi*.

Head. Dark rufo-testaceous with clypeus testaceous; hind border of the latter less raised in the middle. Finely reticulate, clearly punctured, cervical stria fine. Antennae testaceous with the sixth joint serrate.

Pronotum. Testaceous, but black at the base between the striae which are elbowed and about half the pronotal length. Very little narrowed in front; sides very little rounded, more so in front: not reticulate. The striae are indistinctly impressed at the

EXPLANATION OF FIGURES

Figs 1–10. *Bidessus* species. 1. Elytron of *B. sharpi* Régimbart from Kenya. 2a. Median lobe of the aedeagus of *B. sharpi nigeriensis* subsp. nov. b. Elytron of *B. sharpi nigeriensis* subsp. nov. 3a. Median lobe (dorsal view) of the aedeagus of *B. sharpi* from the Transvaal, South Africa. b. Lateral view of the same. 4. Median lobe, dorsal view, of the aedeagus of *B. sharpi sudanensis* subsp. nov. from Tombe, S. Sudan. 5a. Median lobe of the aedeagus of *B. sharpi sudanensis* subsp. nov. from L. Yirol, S. Sudan. b. Lateral view of the same. 6. Elytron of *B. fictor* Omer-Cooper from Nyasaland. 7a. Median lobe of the aedeagus of *B. fictor*. b. Lateral view of the same. 8. Elytron of 'typical' *B. brevistriga* Régimbart. 9a. Median lobe, dorsal view of the aedeagus of *B. brevistriga* from the Sudan. b. Lateral view of the same. c. Lateral view of the median lobe of the aedeagus of *B. brevistriga* from Tanganyika. d. The same from Nigeria. 10. Elytron of *B. brevistriga* showing extreme reduction of the testaceous colour.

base where there are a few large punctures and some finer ones forming a basal row which may cross the middle. The anterior margin is finely punctured, the sides and disc indistinctly so.

Elytra. Shining not reticulate, black and testaceous with transverse testaceous bands as in *sharpi* Rég., *brevistriga* Rég. and *rossi* spec. nov. (fig. 12). Sides rounded, widest just behind the middle. Sutural striae fine and finely punctured, commencing almost at the base and disappearing at about two thirds the length of the elytra. Discal striae almost half the elytral length, straight and almost parallel; the punctures between them and the suture irregular in size, the coarser ones nearer the discal striae almost arranged in rows, those outside them finer and sparser but increasing in size and density as they near the apex and amalgamate with the central ones.

Underside. Black with prosternum, epipleura and last abdominal segment testaceous. The divergent rows of punctures on the metasternum not coarse, those on the metacoxae coarse and irregularly arranged. Metacoxal lines parallel at the base but then divergent.

MALE: Median lobe of the aedeagus narrow, wider at the base, slightly narrower in the middle then narrowing to a fairly long downcurved point (fig. 18).

MATERIAL EXAMINED. RUANDA, Karega Park 2-8 X 1957. (Ross exp. to Africa 1957-58 Coll.) holotype and two paratypes.

This species is very close indeed to *B. rossi* but it is slightly larger, the pronotal striae are longer, the punctuation between the elytral striae is coarser but finer near and outside them. The median lobe of the aedeagus is also different (figs 18, 19 and 20).

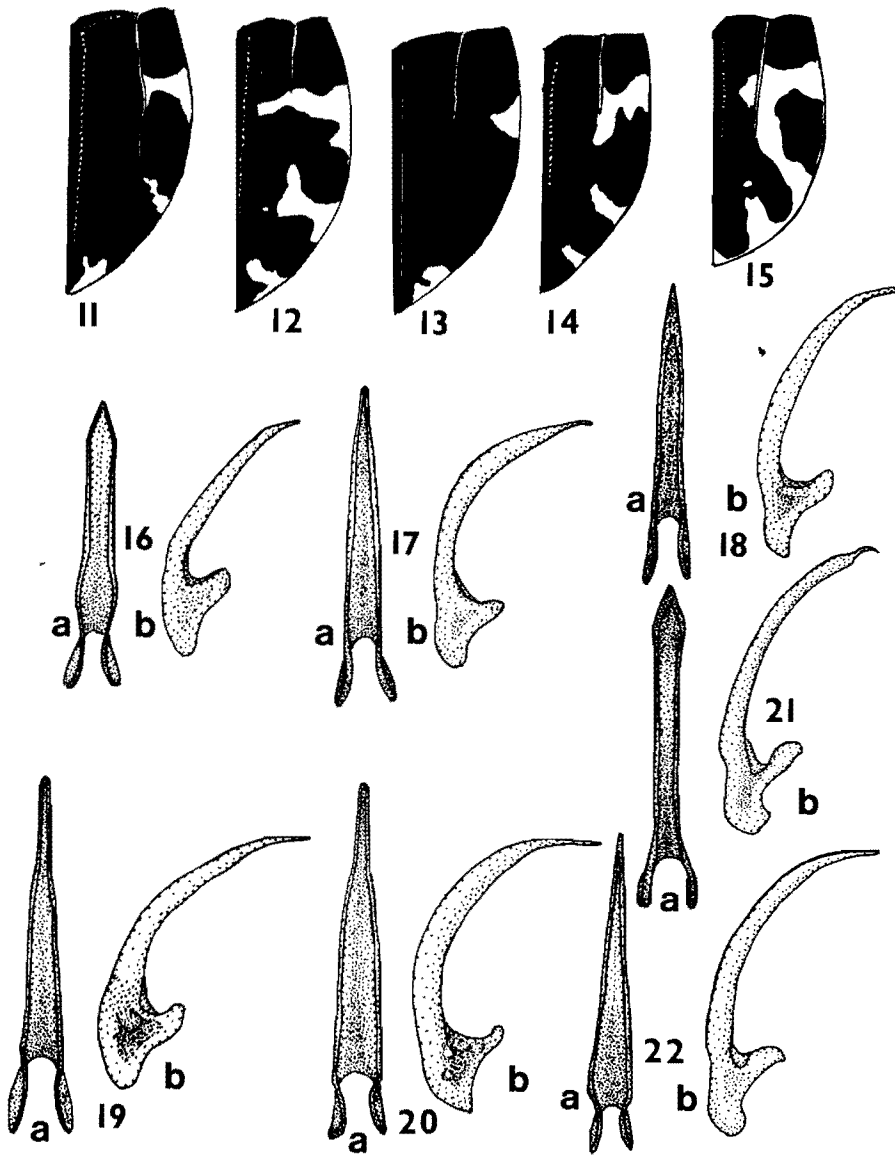
***Bidessus rossi* spec. nov., figs 12, 19, 20**

L. 1.6-1.7 mm. Elongate oval with pronoto-elytral angle scarcely apparent. Black and testaceous with the testaceous colour arranged in transverse irregular bands as in *sharpi* and *brevistriga*.

Head. Dark brown with the clypeus lighter; faintly reticulate and clearly and rather densely punctured, especially behind. Hind border of the clypeus not undulate and usually continued across the head but sometimes interrupted in the middle. Cervical striae fine. Antennae testaceous or testaceous at the base with the remaining joints brownish; sixth joint clearly flat and serrate, the seventh and eighth less clearly so.

Pronotum. Testaceous but black at the base between the striae: slightly narrowed in front; sides almost straight. Not reticulate; striae elbowed, a little more than half the length of the pronotum with a depression at the base sometimes clear, sometimes indistinct: basal punctures between the striae moderately large and moderately numerous becoming very fine at the middle of the base of the pronotum; the rest of the pronotum sparsely and finely punctured except anteriorly and at the sides where the punctures are more evident.

Elytra. Black with three irregular testaceous bands commencing at the margins but not reaching the suture, and the apex testaceous. Not reticulate; sides rounded: discal striae about one quarter of the elytral length, straight, in direct continuation with the pronotal striae, and parallel to the suture. Sutural striae shallow, punctured, almost parallel to the suture, disappearing before the apex. Punctuation dense between the striae and the suture, average in size and only slightly smaller behind and outside the striae.



Figs 11-22. *Bidessus* species. 11. Elytron of *B. longistriga* Régimbart. 12. Elytron of *B. rossi* spec. nov. (*B. ruandensis* is similar except that the discal striae are slightly longer). 13. Elytron of *B. fulgidus* spec. nov. 14. Elytron of *B. straeleni* spec. nov. 15. Elytron of *B. granulum* Régimbart. 16a Median lobe, dorsal view, of the aedeagus of *B. longistriga*. b. The same lateral view. 17a. Median lobe, dorsal view, of the aedeagus of *B. granulum*. b. The same lateral view. 18a. Median lobe of the aedeagus of *B. ruandensis* spec. nov. b. The same lateral view. 19a. Median lobe of the aedeagus of *B. rossi* spec. nov. from the Cape Province of South Africa. b. The same lateral view. 20. Median lobe of the aedeagus of *B. rossi* spec. nov. but from a Belgian Congo specimen. 21a. Median lobe, dorsal view, of *B. fulgidus* spec. nov. b. Lateral view of the same. 22a. Median lobe dorsal view of the aedeagus of *B. straeleni* spec. nov. b. The same lateral view.

Underside. Black with legs, prosternum, hinder part of the metasternum and the apical sternite testaceous. The two divergent rows of punctures on the middle of the metasternum average in size those on the metacoxae larger and fairly numerous except before and behind. Metacoxal lines curved and divergent.

MALE: Aedeagus with the median lobe long and slender with the apical region narrowed and with the sides almost parallel for about one quarter of the total length and then gradually widened to the base (fig. 19).

MATERIAL EXAMINED. ZAIRE (Belgian Congo), 19 miles W. of Kolbezi. holotype and three paratypes, 17 miles E. of Matadi, one paratype 29.vii.1957, and Cape Province, SOUTH AFRICA, 2 miles west of Citrusdal 30.iv.1958 paratype only.

The latter locality is rather surprising but there is only one specimen and I cannot establish any differences which would raise it to the station of even a subspecies. (All the specimens were taken by the Ross Expedition to Africa, 1957–1958).

***Bidessus fulgidus* spec. nov., figs 13, 21**

L. 1.5 mm. Rather widely oval, black and testaceous shining, punctuation fine and poorly impressed.

Head. Rufo-testaceous, brownish along the inside border of the eyes. Clypeus slightly curved, clypeal hind border little raised but complete across the head which is shining but finely and obscurely reticulate, finely and sparsely punctured. Cervical striae very fine. Antennae testaceous with joints 6–9 slightly serrate, stout and comparatively short.

Pronotum. Shining, testaceous with the anterior and posterior borders brown, the brown marking between the striae wider. Sides slightly rounded, base only a little wider than the anterior border. Pronotal striae long, about two thirds of the length of the pronotum, very little angled and almost no depression at their base. The punctures at the base of the striae are not very coarse nor numerous and are continued along the posterior margin of the pronotum as a fine and indistinct row. The rest of the pronotum is very finely and sparsely punctured with a fine and inconspicuous reticulation.

Elytra. Shining black with, on each elytron, an ante-median lateral testaceous mark which includes the epipleura but does not reach the suture, a preapical spot and the apex testaceous. Sides slightly rounded, their greatest width about the middle. Elytral striae almost straight, about one half the length of the elytra, deeper at the base, ending very finely. Sutural striae fine, scarcely punctured, continued almost to the apex. Punctuation fine, poorly impressed, irregular and not dense between the striae, somewhat finer outside them and denser behind.

Underside. Black with the last three abdominal ventrites lighter. The prosternum, epipleura and the two pairs of forelegs testaceous, the hind legs brownish. Anterior narrow part of the metasternum between the metacoxae short and rather wide with only a few shallow punctures; the divergent rows of punctures on the middle of the metasternum extremely fine and almost invisible; metacoxae with a few shallow medium sized punctures not easily seen; metacoxal lines almost parallel with the median longitudinal depression strong. First and third abdominal sternites with a few rather large punctures; last abdominal ventrite with a shallow irregularly shaped punctured depression.

MALE: Median lobe of the aedeagus narrow with, in dorsal view, a slightly expanded apical region narrowing again to a very fine downwardly curved point.

MATERIAL EXAMINED. Southern SUDAN, L. Yirol (type unique).

This species, on account of the very fine punctures making up the two divergent rows on the middle of the metasternum might be placed in group two or three. It seems to me, on account of the shape of the testaceous marks which are visible that it belongs to the *sharpi* group with the testaceous transverse bands reduced, as they often are. It resembles very closely *B. nero* Gschwendter but in that species the punctuation is coarser.

***Bidessus straeleni* spec. nov., fig. 22**

This *Bidessus* is to be found both in the Tervuren Museum (holotype and two paratypes) and in the Paris Museum of Natural History. I have, however, been unable to find a published description and have, therefore, kept the name which Guignot gave it and here describe it as new.

L. 1.25 mm. Almost oblong but a little narrowed behind; disc of elytra rather flat; black and testaceous, shining.

Head. Black, punctured and reticulate. Clypeal border complete or quadritubercular; cervical stria very fine. Antennae short and stout, slightly serrate, testaceous at the base but the remaining joints brown.

Pronotum. Testaceous but with an anterior black border which does not attain the side margins and a posterior black border which almost does and is wider between the striae: short and wide, the sides almost straight and the base very little wider than the anterior border. Striae elbowed with a faint depression at the base and with two or three irregular rows of coarse punctures between them; these punctures become finer towards the middle. The disc is finely and rather sparsely punctured but the usual rows behind the front margin are easily seen.

Elytra. Shining black with, on each elytron an antemedian lateral testaceous irregular band only reaching the discal stria, a post median abbreviated forwardly pointing band, and an anteapical spot testaceous. Pronoto-elytral angle scarcely apparent, elytra slightly narrowed behind. Elytral discal striae short about one third the length of the elytra: punctuation strong and dense between them especially at the base, only a little finer and less dense outside and behind them. Sutural striae consisting of a line of punctures closely approaching the suture behind and then disappearing.

Underside. Piccus with legs and pronotum testaceous. Metasternum with two divergent lines of small punctures. Metacoxae quite strongly punctured behind; coxal lines almost parallel.

MALE: Median lobe of the aedeagus long and gradually narrowed to a downwardly curved narrow blunt point (fig. 22).

MATERIAL EXAMINED. ZAIRE (Belgian Congo) Mabanga (coll. de Saegeri 1952). This is a clearly distinct species resembling *rossi*, but smaller with a different shape and much coarser punctuation on pronotum and elytra.

***Bidessus granulum* Régimbart, 1895: 79, figs 15, 17**

L. 1.5–1.6 mm. More rounded and convex than any other species within the group. The coloration of the elytra is different when the testaceous colour is present in full, since the anterior transverse band is united longitudinally to the post median testaceous one thus enclosing a lateral black mark (fig. 15).

The head is dark between the eyes, lighter in front and behind; reticulate and clearly punctured. The antennae are short and stout. The pronotal striae are elbowed and long with a well marked depression at their base and a varying number of coarse punctures between them. The anterior border of the pronotum is also coarsely punctured but the disc is shining and impunctate. The elytral discal striae are long reaching to about the middle of the elytral length, well impressed and the punctuation between them coarse while that outside them is much finer, as it is behind. The sutural striae consist of large punctures in front which become smaller and disappear before the apex of the elytra. The underside is piceus with the legs and three last abdominal ventrites testaceous, or wholly testaceous. The punctures of the two divergent rows on the middle of the metasternum slightly below average for the group: metacoxal lines almost parallel.

MALE: Median lobe as in fig. 17a.

Distribution. ZAIRE (Congo) type; Gabon, Ivory Coast, Nigeria (B. Malkin coll. 1949).

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